Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

TITLE V DRAFT PERMIT: NO. V-05-074
MOREHEAD STATE UNIVERSITY
MOREHEAD, KY
ROWAN COUNTY, KY.
MARCH 9, 2006
TIMOTHY J. RUST, REVIEWER
SOURCE I.D.: 21-205-00005
SOURCE A.I. #: 3873
ACTIVITY #: APE-2005-0001

SOURCE DESCRIPTION:

Morehead State University has applied to the Division for Air Quality for the renewal of their Title V permit (V-99-052, Revision 1) for the operation of three steam boilers, coal & ash handling operations, coal storage and natural gas piping facilities. The existing emission sources include a 76 mmBtu/hr rated Spreader stoker coal-fired indirect-heat-exchanger with multicylcone and baghouse (emission unit 02); a 36.7 mmBtu/hr rated Underfeed stoker coal-fired indirect-heat-exchanger with multicyclone (emission unit 03); a 31 mmBtu/hr natural gas fired, Scotch Marine Fire tube steam boiler (emission unit 04); and insignificant activities (coal/ash handling and waste incinerator).

COMMENTS:

- Emission Unit 01 demolition has been completed and will be removed from further Title V permitting considerations and requirements.

- The permittee has submitted an initial notification pursuant to 40 CFR 63.7545 to the Federal EPA on September 10, 2005. Emission Units 02 and 03 are subject to requirements of 401 KAR 63:002, incorporating by reference 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Industrial Boilers and Process Heaters, with an initial compliance date of September 13, 2007.

- Prior to the initial compliance date of September 13, 2007, the permittee shall conduct at least one particulate matter mass emission performance test each for emissions units 02 and 03 to demonstrate compliance with allowable particulate matter mass emission standard within one year of the permit issuance and biannually thereafter. After the initial compliance date, pursuant to 40 CFR §63.7510(d), an initial compliance demonstration for each of these units shall be completed no later than 180 days after September 13, 2007 and according to the applicable provisions in 40 CFR §63.7(a)(2) and cited in 40 CFR 63 subpart DDDDD Table 10. Pursuant to 40 CFR §63.7515(a), subsequent performance tests must be conducted on an annual basis and must be completed between 10 and 12 months after the previous performance test, unless the permittee follows the requirements listed in 40 CFR §63.7515 (b) thru (d).

COMMENTS (CONTINUED):

- Prior to September 13, 2007, the permittee may ensure compliance with the emissions limitations and standards conditioned within the permit for Emissions Units 02, 03, and 04 by performing the calculations based upon sulfur content, fuel usage and processing rates, and emission factor information. Additionally, the permittee is required to monitor the fuel consumption rates, processing rates, and operation of the unit's control equipment used to control emissions. For emission limitations taking effect beginning September 13, 2007, the permittee may assure compliance with the emissions limitations and standards by performing calculations according to 40 CFR §63.7530(d)(3), §63.7540, and as referenced in the permit.

- The source will assure compliance for each applicable pollutant, including particulate matter, sulfur dioxide, hydrogen chloride, mercury, and visible emissions, measured by applicable reference methods, or an equivalent or alternative method specified in 40 C.F.R. Chapter I, or by a test method specified in the state implementation plan; by developing site specific monitoring plans pursuant to 40 CFR §63.7505(d); and by developing a Startup, Shutdown, and Malfunction Plan pursuant to 40 CFR §63.6(e)(3).

Applicable Regulations:

For Emission Unit 02:
401 KAR 61:015, Existing indirect heat exchangers, applicable to an emissions unit with a capacity of less than 250 mmBtu/hr which commenced before April 9, 1972;
401 KAR 63:002, Incorporating by reference 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Industrial Boilers and Process Heaters, initial compliance date of September 13, 2007;
40 CFR Part 64, Compliance Assurance Monitoring (CAM);

For Emission Unit 03:
401 KAR 59:015, New indirect heat exchangers, applicable to an emissions unit with a capacity of less than 250 mmBtu/hr which commenced on or after April 9, 1972;
401 KAR 63:002, Incorporating by reference 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Industrial Boilers and Process Heaters, initial compliance date of September 13, 2007;
40 CFR Part 64, Compliance Assurance Monitoring (CAM);

For Emission Unit 04:
401 KAR 59:015, New indirect heat exchangers, applicable to an emissions unit with a capacity of less than 250 mmBtu/hr which commenced on or after April 9, 1972;
401 KAR 60:005, Incorporating by reference 40 CFR 60, Subpart Dc, Standards of Performance for small industrial-commercial-institutional steam generating units, applies to each steam generating unit commenced after June 9, 1989 that has a maximum design heat input capacity between 10mmBtu/hr and 100mmBtu/hr;

The following regulations are not applicable for Emission Units 02 and 03 based on the applicability date of regulation and/or unit size:

401 KAR 60:042, Standards of performance for industrial-commercial-institutional steam generating units, incorporating by reference Title 40 CFR, Part 60, Subpart Db, applicable to an emissions unit of greater than 100 mmBtu/hour and constructed after June 19,1984.
401 KAR 60:005, incorporating by reference 40 CFR 60, Subpart Dc, Standards of Performance for

small industrial-commercial-institutional steam generating units, applies to each steam generating unit commenced after June 9, 1989 that has a maximum design heat input capacity between 10mmBtu/hr and 100mmBtu/hr.

Pursuant to 40 CFR 63.7506 (c), Emission Unit 04 is not subject to requirements of 401 KAR 63:002, incorporating by reference 40 CFR 63, Subpart DDDDD, National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Industrial Boilers and Process Heaters. This includes not being subject to the initial notification requirements in 40 CFR 63.9 (b) and any requirements in 40 CFR 63, Subpart A.

EMISSION AND OPERATING CAPS DESCRIPTION:

Prior to September 13, 2007, for emission Unit 02, pursuant to 401 KAR 61:015, Section 4(1), particulate emissions shall not exceed 0.27 lb/mmBtu based on a three-hour average and Section 5(1), sulfur dioxide emissions shall not exceed 6.07 lb/mmBtu based on a twenty-four hour average. Beginning September 13, 2007, pursuant to 401 KAR 63:002, incorporating by reference 40 CFR 63 subpart DDDDD Table 1 (9), particulate matter emissions shall not exceed 0.07 lb/mmBtu, hydrogen chloride emissions shall not exceed 0.09 lb/mmBtu, mercury emissions shall not exceed 0.000009 lb/mmBtu (all based on a three-hour average); and sulfur dioxide emission limitations shall be identical as before pursuant to 401 KAR 61:015, Section 5(1).

Prior to September 13, 2007, for emission Unit 03, pursuant to 401 KAR 59:015, Section 4(1), particulate emissions shall not exceed 0.28 lb/mmBtu based on a three-hour average and Section 5(1), sulfur dioxide emissions shall not exceed 1.36 lb/mmBtu based on a twenty-four hour average. Beginning September 13, 2007, pursuant to 401 KAR 63:002, incorporating by reference 40 CFR 63 subpart DDDDD Table 1 (9), particulate matter emissions shall not exceed 0.07 lb/mmBtu, hydrogen chloride emissions shall not exceed 0.09 lb/mmBtu, mercury emissions shall not exceed 0.000009 lb/mmBtu (all based on a three-hour average); and sulfur dioxide emission limitations shall be identical as before pursuant to 401 KAR 59:015, Section 5(1).

For Emission Unit 04, pursuant to 401 KAR 59:015, Section 4(1)(c), particulate emissions shall not exceed 0.27 lb/mmBtu based on a three-hour average and Section 5(1)(c), sulfur dioxide emissions shall not exceed 0.84 lb/mmBtu based on a twenty-four-hour average.

In addition, the permittee shall monitor for Emission Units 02, & 03 the amount of fuel combusted on a weekly basis and for Emission unit 04 the natural gas usage on a daily basis. Emission factors were obtained from indirect heat exchanger manufacturers specifications and from AP-42.

For Emissions Units 02, 03, & 04, pursuant to 401 KAR 61:015, Section 4(2) and 401 KAR 59:015, Section 4(2), visible emissions shall not exceed twenty (20) percent opacity based on a six minute average, except that a maximum of forty (40) percent opacity shall be permissible for not more than six (6) consecutive minutes in any sixty (60) consecutive minutes during cleaning the fire box or blowing soot. Beginning September 13, 2007, for Emission Units 02 & 03, pursuant to 40 CFR 63 subpart DDDDD Table 2 (2)(b), the opacity exception shall change to one six-minute period per hour of not more than twenty-seven (27) percent opacity. When each unit is in operation, the permittee shall read, weather permitting, the visible emissions using U.S. EPA Reference Method 9 once per week. For Emission Unit 02, pursuant to 40 CFR §63.7525(b), a Continuous Opacity Monitoring System must be installed, operated, certified, and maintained by the compliance date of September 13, 2007.

CONTROL DEVICE REQUIREMENT:

Pursuant to 401 KAR 50:055, Section 2(5), at all times, including periods of startup, shutdown and malfunction, owners and operators shall, to the extent practicable, maintain and operate any affected facility including associated air pollution control equipment in a manner consistent with good air pollution control practice for minimizing emissions. Determination of whether acceptable operating and maintenance procedures are being used will be based on information available to the Division which may include, but is not limited to, monitoring results, opacity observations, review of operating and maintenance procedures, and inspection of the source.

Beginning with the initial compliance date of September 13, 2007, in addition to the requirements listed above, pursuant to 40 CFR §63.6(e)(1)-(2), the permittee must operate all equipment to minimize emissions at all times, and correct malfunctions as soon as practicable.

The permittee will determine sulfur dioxide emissions by using the heat input calculated by fuel sampling and analysis pursuant to Section 7(6) of 401 KAR 59:015. Compliance with the emission standards for particulate matter, sulfur dioxide, and opacity of EU 04 will be assured while burning natural gas.

Pursuant to 40 CFR Part 64, a CAM plan for EU02 and EU03 has been filed with the Division that covers particulate emissions for those units. The permittee has chosen to use select operational parameters of the collection devices and visible emission evaluations to assure compliance with the particulate emission standards. These parameters will be verified for their ongoing validity with data from each required performance test. Threshold limits have been established requiring the permittee to develop and submit a Quality Improvement Plan (QIP) when multiple excursions outside parameter ranges occur within specified time frames.

Beginning September 13, 2007, pursuant to 40 CFR §63.7505(d) a site-specific monitoring plan must be developed according to 40 CFR §63.7505(d)(1) thru (4). This site-specific monitoring plan shall be incorporated into and become the new CAM Plan. Additionally, pursuant to 40 CFR §63.6(e)(3), a Startup, Shutdown, and Malfunction Plan (SSMP) must be developed. The SSMP shall be incorporated into the CAM Plan as it applies to QA/QC and QIP. Pursuant to 40 CFR §64.7(e), new indicator ranges for the CAM Plan shall be established from the initial performance test and site-specific monitoring plan.

CREDIBLE EVIDENCE:

This permit contains provisions which require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.